AMENDMENT

This listing of claims will replace all prior versions, and listing, of claims in the application.

1. (Original) A method, comprising:

sighting a position correlated to at least a subset of a three-dimensional data set representing a field of view; and

targeting a controlled system to the position from the three-dimensional data set.

2. (Original) The method of claim 1, wherein the three-dimensional data comprises LADAR data.

3. (Original) The method of claim 1, further comprising at least one of:

acquiring the three-dimensional data;

processing the three-dimensional data;

displaying a representation of the three-dimensional data;

displaying a projected target point after the controlled system is targeted; and

taking an action responsive to targeting the position.

4. (Original) The method of claim 3, wherein acquiring the three-dimensional data includes:

transmitting a plurality of LADAR pulses; and

receiving the LADAR pulses after they are reflected.

5. (Original) The method of claim 3, wherein processing the three-dimensional data includes generating a three-dimensional image from the three-dimensional data.

6. (Original) The method of claim 5, wherein the three-dimensional image is the representation.

7. (Original) The method of claim 5, wherein generating the three-dimensional image includes:

pre-processing the three-dimensional data;

detecting a target represented by a subset of the three-dimensional data;

segmenting the subset from the remainder of the three-dimensional data;

extracting features of the target from the segmented data; and

classifying the segmented subset as including a particular kind of target based on the extracted features.

8. (Original) The method of claim 1, wherein sighting the position indicating a portion of a displayed image generated from the three-dimensional data.

9. (Original) The method of claim 8, wherein targeting the controlled system includes aiming a weapon system at the sighted position.

10. (Original) The method of claim 1, wherein targeting the controlled system includes aiming a weapon system at the sighted position.

11. (Original) An apparatus, comprising:

a program storage medium capable of storing a three-dimensional data set representing a field of view;

a controller capable of generating a presentation of the three-dimensional data set;

a controller interface through which a position represented by at least a subset of the three-dimensional data can be sighted and through which the position can be targeted from the subset.

12. (Original) The apparatus of claim 11, wherein the program storage medium comprises a magnetic program storage medium or an optical program storage medium.

13. (Canceled)

14. (Canceled)

15. (Original) The apparatus of claim 11, wherein the controller comprises a digital processor.

16. (Canceled)

17. (Original) The apparatus of claim 11, wherein the controller interface includes a display.

18. (Canceled)

19. (Original) The apparatus of claim 11, wherein the display includes a touch screen.

20. (Original) The apparatus of claim 17, wherein the controller interface includes at least one peripheral input/output device.

21. (Original) A controlled system, comprising:

a data acquisition system capable of acquiring a three-dimensional data set representing a field of view;

a sighting and targeting subsystem, including:

a program storage medium capable of storing the three-dimensional data set;

a controller capable of generating a presentation of the three-dimensional data set; and

a controller interface through which a position represented by at least a subset of the three-dimensional data can be sighted and through which the position can be targeted from a presentation of the subset;

a control subsystem capable of implementing instructions from the sighting and targeting subsystem.

22. (Original) The controlled system of claim 21, wherein the data acquisition system includes a LADAR system.

23. (Currently Amended) The controlled system of claim 22 ~~21~~, wherein the LADAR system comprises a direct diode LADAR system.

24. (Original) The controlled system of claim 21, wherein the control subsystem comprises a weapon pointing system.

25. (Original) A method, comprising:

acquiring a three-dimensional data set representing the content of a field of view;

generating a three-dimensional representation of the content from the three-dimensional data set;

displaying the three-dimensional representation;

sighting a position within the field of view from the three-dimensional representation; and

targeting the sighted position using the three-dimensional data set.

26. (Original) The method of claim 25, wherein acquiring the three-dimensional data set includes:

transmitting a plurality of light pulses; and

receiving a plurality of the transmitted light pulses upon their reflection by an object in the field of view.

27. (Original) The method of claim 26, further comprising:

extracting the three-dimensional data from the received light pulses; and

storing the received light pulses in a row column format.

28. (Original) The method of claim 25, wherein generating the three-dimensional representation includes:

detecting a region of interest in the three-dimensional image;

segmenting a target in the region of interest from the three-dimensional image;

extracting features of the segmented target; and

classifying the target from the extracted features.

29. (Original) The method of claim 25, further comprising pre-processing the three-dimensional data.

30. (Original) The method of claim 25, further comprising transmitting the generated three-dimensional image to a remote location before displaying the three-dimensional image.

31. (Original) An apparatus, comprising:

means for sighting a position correlated to at least a subset of a three-dimensional data set representing a field of view; and

means for targeting a controlled system to the position from the three-dimensional data set.

32. (Original) The apparatus of claim 31, wherein the three-dimensional data comprises LADAR data.

33. (Original) The apparatus of claim 31, further comprising at least one of:
means for acquiring the three-dimensional data;
means for processing the three-dimensional data;
means for displaying a representation of the three-dimensional data;
means for displaying a projected target point after the controlled system is targeted; and
means for taking an action responsive to targeting the position.

34. (Original) The apparatus of claim 31, wherein targeting the controlled system includes aiming a weapon system at the sighted position.

35. (Original) An apparatus, comprising:
means for storing a three-dimensional data set representing a field of view;
means for generating a presentation of the three-dimensional data set;
means for sighting a position represented by at least a subset of the three-dimensional data and for targeting the position from the subset.

36. (Original) The apparatus of claim 35, wherein the storing means comprises a magnetic program storage medium or an optical program storage medium.

37. (Original) The apparatus of claim 35, wherein the generating means comprises a digital processor.

38. (Original) The apparatus of claim 35, wherein the sighting and targeting means includes a display.

39. (Amended) The apparatus of claim 35 ~~21~~, wherein the program storage medium comprises a magnetic program storage medium or an optical program storage medium.

40. (Canceled)

41. (Original) The apparatus of claim 21, wherein the controller comprises a digital processor.

42. (Original) The apparatus of claim 21, wherein the controller interface includes a display.

43. (Canceled)

44. (Amended) The method of claim 25, wherein sighting the position includes indicating a portion of a displayed image generated from the three-dimensional data.

45. (Original) The method of claim 25, wherein targeting the controlled system includes aiming a weapon system at the sighted position.

46. (Canceled)

47. (New) A controlled system, comprising:

a data acquisition system capable of acquiring a three-dimensional data set representing a field of view;

a sighting and targeting subsystem, including:

a program storage medium on which the three-dimensional data sat may be stored; and

a controller capable of:

identifying a target represented by at least a subset of the stored three-dimensional data set;

sighting a position correlated to at least a subset of a three-dimensional data set representing a field of view; and

targeting a controlled system to the position from the three-dimensional data set.

a control subsystem capable of implementing the targeting of the target.

48. (New) The controlled system of claim 47, wherein the data acquisition system includes at least one of a LADAR system and a thermal imager.

49. (New) The controlled system of claim 47, wherein the control subsystem comprises a weapon pointing system.

50. (New) The apparatus of claim 47, wherein the controller comprises a digital processor.

51. (New) The apparatus of claim 47, further comprising a positioning system from which the controller may receive positioning information.

52. (New) The apparatus of claim 47, wherein controller is capable of identifying the target by:

pre-processing the three-dimensional data;

detecting a target represented by a subset of the three-dimensional data;

segmenting the subset from the remainder of the three-dimensional data;

extracting features of the target from the segmented data; and

classifying the segmented subset as including a particular kind of target based on the extracted features.

53. (New) The apparatus of claim 47, wherein the controller is capable of identifying the target by:

displaying a representation of the three dimensional data set through a controller interface;

receiving an input through the controller interface indicating the target.

54. (New) A method, comprising:

identifying a target represented by at least a subset of a three-dimensional data set representing a field of view;

sighting a position correlated to the identified target from the three-dimensional data set representing a field of view; and

targeting a controlled system to the sighted position from the three-dimensional data set.

55. (New) The method of claim 54, wherein the three-dimensional data comprises at least one of LADAR data and thermal imaging data.